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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,852	11/07/2000	Andrey Zarur Jury	S1417/7004	9828

7590

06/04/2003

Timothy J Oyer
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EXAMINER

REDDING, DAVID A

ART UNIT

PAPER NUMBER

1744

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/707,852

Applicant(s)

JURY ET AL.

Examiner

David A Redding

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-111 is/are pending in the application.
- 4a) Of the above claim(s) 1-57 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 68-72,75-83,87,88,90 and 104 is/are allowed.
- 6) ☒ Claim(s) 58-67,73,74,84-86,89,91-103 and 105-111 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

1. Applicant's election with traverse of group II claims 58-101 with traverse in Paper No. 12 is acknowledged. The traversal is on the ground(s) that a single search and examination covering all claims would not place undue burden on the examiner. This is not found persuasive because applicant has given a reason as to why he believes the search would not place an undue burden, even in view of the fact that the different groups are classified in different subclasses.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 60,97-99,102,106-110, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 60,97-99,102,106-110 are essentially process limitations. Accordingly, it is indefinite as to how such limitations structurally further define the reactor.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 58-61,67,73,89,97-100-103,105-111, are rejected under 35 U.S.C. 102(a) as being anticipated by USP 5,993,750 (Ghosh et al.).

Ghosh et al. discloses a microfluidic chemical reactor comprised of multiple layers which are sintered together to form a unitary body. Figure 3a, element 30, shows a mixing chamber comprising including a serpentine channel 26 and outlet 28 which leads into several reaction chambers 44,46,48. The reactor includes heating coils 84, figure 7, for controlling the temperature of the unitary device. Figure 5b shows a heating coil running parallel to reaction chamber 44. Figure 5c shows a separation means (filter 62). Figure 6 shows the analyzer section 100 which leads to discharge 82 in figure 7.

With regards to claims 60,92-99,102,106-110, the reactor is considered to be structurally capable of functioning in the manner claimed.

6. Claims 58-61,65-67,73,74,84,86,89,97-99,102,103,105-111, are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/17093.

The WO document discloses a microfluidic assay device constructed from a silicon chip comprising etched channels and chambers which serve to perform the assay. See description of figure 1.

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The chip includes a mixing region B, a reaction chamber C, which includes heating means with temperature sensor, and a separation means (electrophoresis column) in section D. Section D is considered to read on claims 84 and 86.

7. Claims 58-61,91-97, are rejected under 35 U.S.C. 102(b) as being anticipated by USP 5,534,328 (Ashmead et al.).

Ashmead et al. discloses a microreactor comprised of stacked layers which include channels and chambers for conducting reactants and reaction products. The reference discloses that multiple units of the chemical microreactors can be used in sequence or tandem, (parallel), as claimed (col.13, lines 37-39).

8. Claims 58-61,65,66,84-86, are rejected under 35 U.S.C. 102(b) as being anticipated by USP 5,928,880 (Wilding et al.).

Figure 5 shows the embodiment which reads on the claimed invention. The microreactor is composed of two halves, a sample prep. halve on the right side and an assay section of the right. The sample prep section includes a separation means in the form of a filtering section 18 which includes a carrier fluid. The separation section is removable from the analytical section which comprises a reaction chamber 112 or 122.

9. Claims 58-61,82,83, are rejected under 35 U.S.C. 102(e) as being anticipated by USP 6,551,841 B1 (Wilding et al.).

Wilding et al. discloses a mesoscale microfluidic reactor which can have cells immobilized therein (col.13, lines 18-32).

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Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 62-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/17093 or USP 5,928,880 (Wilding et al.).

In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In the absence of unexpected results the claimed dimensions are considered to be unpatentable over the sizes disclosed in Wilding et al. and the WO document.

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Allowable Subject Matter

13. Claims 68-72,75-83,87,88, and 104 are considered to be allowable over the prior art of record.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Redding whose telephone number is 703-308-3910. The examiner can normally be reached on M,T,Th,Fr, 7:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Warden can be reached on 703-308-2920. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



David A Redding
Primary Examiner
Art Unit 1744

D.A.R.
June 2, 2003